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ABSTRACT

Provides a history of the Association for the Education of Teachers in Science (AETS). Each formal meeting of AETS is summarized to include topics covered, date, location, presiding officers, and major association events or accomplishments for the year. (SL)

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AETS: AN OUTLINE OF THE HISTORY OF THE ASSOCIATION FOR THE EDUCATION OF TEACHERS IN SCIENCE

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A Paper Prepared for the Meeting of the
Association for the Education of Teachers in Science

Cincinnati, Ohio
25 March 1977

SE 022 405

The Association for the Education of Teachers in Science (AETS) is an association of science educators devoted to leadership in teacher education in science. It is now a Division Affiliate of the National Science Teachers Association. It has approximately 700 members in the United States, Canada, and other countries. Through its meetings, working committees, publications and other activities it strives to improve teacher education in science.

Through the decades of its existence, AETS has evolved from an informal conference of people concerned with the education of teachers in science, with most of its members and all its meetings in Eastern United States, to an international organization that meets annually with the National Science Teachers Association and in smaller regional meetings held throughout North America. Its members serve in many of the leading teacher education institutions in North America and other regions of the world. In this evolution, AETS members have struggled together to deal with some of the intractable problems individuals and institutions have faced in their critical function of educating teachers in science. In the history of AETS are mirrored many of the problems and perplexities, hopes and dreams of the education and society in which this Association has evolved.

Historical study is a way of learning from the past. He who does not study history may not be doomed to repeat it, but he surely cannot profit from the experiences of those who have gone before. The history of AETS is replete with lively discussions, too often dimmed in memory; provocative ideas that provide Eureka experiences for the wheelwrights who discover them decades after they have been flashed and tempered in the mind-stretching discussions that have characterized the meetings of AETS. The function of historical study is to provide another source of ideas -- ideas that come from our experiences and those of our predecessors. These ideas should help us to do better in the future than we have in the past.

This is an outline of the history of AETS. First, there is a chronological history of the origins and evolution of the organization. There is more material to be woven into this chronological history. Second, there is a list of some of the major ideas that seem to be suggested by this half century of experience. There may be more such ideas, and the ones that have been identified should be amplified and extended. Third, there is a list of sources that may be of use to others who wish to investigate the history of AETS. All of this is presented for discussion and criticism so that the next version will be better.

The early years of AETS. The Association for the Education of Teachers in Science (AETS) had its origins in the late Twenties with a series of visits, conferences and meetings of people involved in educating teachers in science.[1] A central figure in forming the organization was S.

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[1]There is little published material dealing with the origins of AETS. The information that is available is in the form of correspondence, tapes and notes of conversations.

Ralph Powers.[2]

In 1923, S. Ralph Powers was invited by Dean James E. Russell to Teachers College, Columbia University from the University of Minnesota, and he became Professor and Head of the Natural Science Department in 1928. Dean Russell urged that Powers visit various science teacher training institutions and confer with others concerned with teacher education in science. Visits were made to such state colleges as those at West Chester, Trenton and Montclair. These visits were returned, and these interchanges were mutually advantageous. AETS grew out of this interchange of visits.[3]

Small roundtable conferences of science teacher educators were organized by Powers and his associates in the late 1920's. There was general agreement that these conferences were helpful and that they should be held regularly.

In 1929 and 1930, a small group of heads of departments of science in institutions primarily devoted to teacher education planned a somewhat larger meeting for the autumn of 1930.[4] The small group of department heads sent announcements of this meeting to the presidents of teacher education institutions throughout the East along with invitations for a member of their science department to attend. Other invitations went to city and state supervisors in the region. "There was a generous response followed by a large attendance.

This conference was so successful that the institutions represented encouraged the Department of Natural Sciences at Teachers College, Columbia University to make the conference as an annual event.[5]

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[2]Clarence M. Pruitt, "Samuel Ralph Powers," Science Education, Vol. 40, no. 5 (December 1956) pp. 354-361.

[3]Correspondence from Gerald S. Craig and notes of conversations with S. Ralph Powers and Victor Crowell support the view that the Association started with these interchanges of visits. In private correspondence, Gerald S. Craig has stated that he has "clear historical evidence" that the first informal conference-symposium was held during the academic year 1925-26.

[4]From notes of conversations with S. Ralph Powers and checked with F. L. Fitzpatrick.

[5]Correspondence from Gerald S. Craig.

After a visit and talk by Powers to the Science Club at the State Teachers College at West Chester, Pennsylvania a "self-appointed" committee of four[6] composed of W. L. Eikenberry,[7] New Jersey State Teachers College at Trenton, Earl R. Glenn, New Jersey State Teachers College at Montclair, John C. Johnson, State Teachers College, West Chester, Pennsylvania, S. Ralph Powers, Teachers College, Columbia University met and corresponded to plan the first formal conference. This meeting was planned for the fall of 1932.

Formal meetings begin. The formal meetings had duplicated programs and for many years were numbered consecutively starting with the meeting in the fall of 1932.

FIRST MEETING[8]

This committee planned what apparently was the first formal meeting of AETS. All science teachers in nearby states were invited to a science conference held in October, 1932 at Teachers College, Columbia University. No copy of the program, if there was one, has been found.[9] However, correspondence between the members of the self-appointed planning committee suggests that reports were given on the programs that were being developed in state systems.

SECOND MEETING[10]

What was probably the second meeting of the Conference on the Education of Science Teachers in State Teachers Colleges was held on April 28th and 29th, 1933 at Teachers College, Columbia University. The program consisted of reports of committees dealing with topics ranging from "Entrance Requirements in State Teachers Colleges" to "The Program for the Education of Teachers for the Junior High School."

1933 Chairman -- S. Ralph Powers, T.C. Columbia University

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[6]Letter from John C. Johnson

[7]Clarence M. Pruitt, "William Lewis Eikenberry," Science Education, Vol. 40, no. 4 (October 1956) pp. 259-261.

[8]This was apparently considered the first formal meeting of the Conference on the Education of Science Teachers in State Teachers Colleges. Henceforth, meetings were numbered consecutively through the 37th meeting in 1956. The numbering was based on the meeting in the fall of 1932 being the first meeting.

[9]Victor Crowell, who attended many of the early meetings, has stated that there was a dupicated program for this first formal conference, but no copy has been located. Crowell's extensive collection of programs was accidentally destroyed. It may have included a copy of the first program.

[10]A copy of the program for this meeting and for several of the subsequent meetings were given to the Library of Teachers College, Columbia University by John C. Johnson in 1971.

At this conference it was decided to hold two meetings a year -- one late in October or early November and the other later in the academic year.

THE THIRD MEETING

Apparently, the first meeting away from T.C. Columbia University and the third meeting of the Conference on the Education of Science Teachers in State Teachers Colleges was held at New Jersey State Teachers College, Trenton, New Jersey, November 3rd and 4th, 1933. The program was primarily devoted to the consideration of reports of committees working on the character of courses.

FOURTH MEETING

1934 Chairman -- S. Ralph Powers, T.C. Columbia University.

Secretary -- Orra Underhill, T.C. Columbia University.

The fourth meeting was held April 27 and 28th, 1934 at Teachers College, Columbia University. Since earlier meetings had been devoted to the first year of teacher education, this meeting was directed to what should happen after the first year. The "Conference" approved the general features of the tentative program for minimum requirements for science teachers.

FIFTH MEETING

The fifth meeting was held November 16th and 19th, 1934 at the State Teachers College, West Chester, Pennsylvania.

Chairman -- S. Ralph Powers, T.C. Columbia University

Secretary -- Mervin E. Oakes, State Normal School, Fredonia, New York.

Sixty-three people were in attendance. The proposed science outline of the Pennsylvania State Teachers College adopted at Shippensburg in April 1934 was the basis for discussion.

SIXTH MEETING

The sixth meeting of the Conference on the Education of Science Teachers in State Teachers Colleges was held May 3 and 4, 1935 at Teachers College, Columbia University.

President -- John C. Johnson, State Teachers College, West Chester Pennsylvania

Secretary -- S. Ralph Powers, T.C. Columbia University

Several presentations were made on the topic "The Demands Made Upon the Teachers College by the New Developments in Science for the Elementary School and Junior High School."

SEVENTH MEETING

The seventh meeting was held November 15 and 16, 1935 at Cornell University. This was the first meeting for which the title Conference on the Education of Teachers in Science was used.

President -- John C. Johnson, State Teachers College, West Chester, Pennsylvania.

Secretary -- S. Ralph Powers, T.C. Columbia University.

Attention was given to certification and teacher education in the State of New Jersey.

EIGHTH MEETING

The eighth meeting was held April 17 and 18, 1936 at Teachers College, Columbia University.

President -- John C. Johnson, State Teachers College, West Chester, Pennsylvania.

Secretary -- S. Ralph Powers, T.C. Columbia University.

There was an elaborate program on the general topic of "Education of Classroom Teachers for the Elementary School" and "Education of teachers of Science for the Secondary School," with many sub-topics. Sixty-one people were in attendance. For the first time an "assessment" (not dues) was made of those who felt they had profited from the work of the Conference. The "assessment" was $1.00.

NINTH MEETING

The ninth meeting was held November 6 and 7, 1936 at New Jersey State Teachers College, Montclair, New Jersey.

President -- John C. Johnson, State Teachers College, West Chester, Pennsylvania.

Secretary-Treasurer -- S. Ralph Powers, T.C. Columbia University

Topics discussed were:

The Science Education Program in New Jersey
The Part to be Played by Science in Future Education
The Place of the School of Practice in the Education of Teachers in Science

Fifty-four people were in attendance.

TENTH MEETING

The tenth meeting was held April 23 and 24, 1937 at Teachers College, Columbia University.

President -- W. L. Eikenberry, New Jersey State Teachers College at Trenton.

Secretary-Treasurer -- Gerald S. Craig,[11] T.C. Columbia University.

There was an elaborate program dealing with such topics as: "Three New Units of Instruction," "Improvement of Laboratory Instruction," "Professional Preparation of Teachers", and "Recent Developments in the Teaching of General Science."

A membership fee of $1.00 was assigned.

ELEVENTH MEETING

The eleventh meeting was held November 5 and 6, 1937 at State Teachers College, Buffalo, New York.

President -- W.L. Eikenberry, New Jersey State Teachers College at Trenton.

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University.

Among the topics discussed were the "New York State Program in Elementary Science," "Teaching Science in the Field," and "Science Interests."

TWELFTH MEETING

The twelfth meeting was held April 29 and 30, 1938 at Teachers College, Columbia University.

President -- E. Laurence Palmer,[12] Cornell University.

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

There was an elaborate program dealing with such topics as "Evaluation of Courses," "Needed Reforms," "Laboratories," "The Place of the Laboratory School," and "In Service Education of Teachers."

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[11]Clarence M. Pruitt, "Gerald Spellman Craig," Science Education, Vol. 40, No. 3 (April 1956) pp. 180-182.

[12]Clarence M. Pruitt, "E. Laurence Palmer," Science Education, Vol. 47, No. 3 (April 1963) pp. 209-220.

The suggestion was made that every two or three years a directory of paid up members be published.

THIRTEENTH MEETING

The thirteenth meeting was held November 4 and 5, 1938 at the Rhode Island College of Education, Providence, Rhode Island.

President -- E. Laurence Palmer, Cornell University.

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

Among the topics discussed were "Redirecting Elementary Education," "The Redirection of Secondary Education," and "Redirection of Teacher Education in the Content Areas."

FOURTEENTH MEETING

The fourteenth meeting was held April 28 and 29, 1939 at Teachers College, Columbia University.

President -- E. Laurence Palmer, Cornell University

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

There were discussions of teaching science by radio, criteria used for the selection of science books, and the problems of conservation in teacher education.

FIFTEENTH MEETING

The fifteenth meeting was planned for November 3 and 4, 1939 at the State Teachers College, Towson, Maryland. No copy of the program or reports of this meeting have been found.

SIXTEENTH MEETING

The sixteenth meeting was held April 26 and 27, 1940 at Teachers College, Columbia University.

President -- Earl R. Glenn, New Jersey State Teachers College at Montclair.

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

Topics:

In-service Education of Teachers in Science.
What Shall Be the Nature of the Goals of Science in Teacher Education in Light of Existing Conditions?
Teaching Science in the Classroom.

SEVENTEENTH MEETING

The seventeenth meeting was held November 1 and 2, 1940 at State Teachers College, Slippery Rock, Pennsylvania.

President -- Earl R. Glenn, New Jersey State Teachers College at Montclair

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

Topics:

Science in the Four-Year Program for Training Elementary Teachers
A Twelve-Year Program for Science Education and The Implications for Training Science Teachers
Five-Year Programs for Training Science Teachers for Junior and Senior High Schools
What can This Conference Do to Help the Eastern States Develop a Twelve-Year Program of Science Education
Field Work in the Training of Science Teachers

EIGHTEENTH MEETING

The eighteenth meeting was held November 7 and 8, 1941 at Teachers College, Columbia University.

President -- Earl R. Glenn, New Jersey State Teachers College at Montclair

Secretary-Treasurer -- Gerald S. Craig, T.C. Columbia University

Topics:

Functional Outlines for Grades 1 to 6
Functional Outlines of Science Education in Junior and Senior High Schools
Nutrition and Defense
Summary of Changes Needed in Present-day Programs of the Education of Science Teachers.

Business:

A plan was drawn up for meetings at
1942 Boston
1943 New York
1944 Ithaca
1945 New York
1946 Washington

Anna Gemmill was elected President
Ethel Ramsden was elected Secretary
Herbert Arnold was elected Treasurer.

NINETEENTH MEETING

Cancelled

President -- Anna M. Gemmill,[13] State Teachers College, Buffalo, New York

Secretary -- Ethel Ramsden

Treasurer -- Herbert Arnold, T.C. Columbia University

This meeting and those that were to follow were cancelled "... in compliance with the request of the Federal Government to reduce the demand for transportation."

UNNUMBERED MEETING

The first postwar meeting was held November 15 and 16, 1946 at Teachers College, Columbia University. It should have been the Twentieth meeting, but the spring meeting held in Trenton was called the "Twentieth." The meeting was apparently organized by S. Ralph Powers.

Topics:

Education of Teachers in Science to Meet the Needs of Today.
What are the major issues to be considered in the states represented in this conference?

Trends in Teacher Education in Science

Recommendations on Teacher Education in Science (Preview of teacher education section of 46th Yearbook)

The Physiological Effects of Products from Atomic Fission

The Science Building for a Teachers College

The Community and Field as Sources of Subject Matter and Experience for Teacher Education.

Business:

Beginning with this meeting and carrying through Fall 1959 meeting, the reports of the secretary were kept in a black (15 ¢) notebook.

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[13]Clarence M. Pruitt, "Anna May Gemmill," Science Education, Vol. 43, No. 4 (October 1959) pp. 285-286.

It was decided to hold meeting semiannually; fall meetings at Teachers College, Columbia University and the spring meeting at one of the member colleges.

Dues were to be assessed on colleges rather than members.

5+ members	$3.00
3 or 4 members	$2.00
2 or less	$1.00

TWENTIETH MEETING

The Twentieth meeting was held April 25 and 26, 1947 at the State Teachers College, Trenton, New Jersey.

President -- Victor L. Crowell, State Teachers College, Trenton, New Jersey

Secretary-Treasurer -- Alice Williams, State Teachers College, Potsdam, New York, E.C. Blom, State Teachers College, Fredonia, New York

Topics:

Science as seen by the Administrator
Visit to Open Hearth Division of John Roebling's Sons Steel Mills

TWENTY-FIRST MEETING

The Twenty-First Meeting was held November 14 and 15, 1947 at Teachers College, Columbia University.

President -- Victor L. Crowell, State Teachers College, Trenton, New Jersey

Secretary-Treasurer -- Alice Williams, State Teachers College, Potsdam, New York, E.C. Blom, State Teachers College, Fredonia, New York

Topics:

Scientific Inquiry in High School Science Textbooks
Science Teaching in Natural Science
Community Resources in the Education of Negro Teachers
Using the Resources of a Region in Teacher Education
Goals and trends in Senior High School Science, Science in Childhood Education and Teacher Education
Curriculum Planning for the Elementary Schools of Pennsylvania

Business:

"Instead of having member institutions pay fees it was decided to ask individuals to contribute one dollar toward the expenses of the Conference. The change was made due to the difficulty of obtaining funds from instiutions."

TWENTY-SECOND MEETING

The Twenty-Second meeting was held April 16 and 17, 1948 at Wilson Teachers College, Washington, D.C.

President -- Ellis Haworth, Wilson Teachers College, Washington, D.C.

Secretary-Treasurer -- Alice Williams, State Teachers College, Potsdam, New York

Topics:

Issues in Teacher Education as Seen by Science Teachers in Teachers Colleges.
Improvement of Instruction in Secondary Schools
Improvement of Instruction in Elementary Schools

TWENTY-THIRD MEETING

The Twenty-Third meeting was held November 19 and 20, 1948 at Teachers College, Columbia University

President -- Ellis Haworth, Wilson Teachers College, Washington, D.C.

Secretary-Treasurer -- Alice Williams, State Teachers College, Potsdam, New York

Topics:

The Group Process in Science Education
Elementary School
Science Education

TWENTY-FOURTH MEETING

The Twenty-Fourth meeting was held April 29 and 30, 1949 at the State Teachers College, Buffalo, New York

President -- H. Emmett Brown,[14] State Teachers College, Buffalo, New York

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[14]Clarence M. Pruitt, "H. Emmett Brown," Science Education, Vol. 43, No. 3 (April 1959) pp. 189-191.

Secretary -- Theresa Lammers,[15] State Teachers College, Westfield, Massachusetts

Treasurer -- Richard Lampkin, State Teachers College, Montclair, New Jersey

Topics:

Trends in Elementary Science (Various states)
Using Science Subject-Matter and Activities to Solve Children's Problems
Visit to Niagara Falls
Using Community Resources in Science Teaching
Geology Trip to Niagara Gorge

Business:

The members voted to affiliate with the National Science Teachers Association (A fee of $2.00 was involved).

TWENTY-FIFTH MEETING

The Twenty-Fifth meeting was held November 18 and 19, 1949 at Teachers College, Columbia University.

President -- H. Emmett Brown, New York State College for Teachers, Buffalo, New York

Secretary -- Theresa Lammers, State Teachers College, Westfield, Massachusetts

Treasurer -- Richard A. Lampkin, State Teachers College, Montclair, New Jersey

Topics:

An Appraisal and Look to the Future of Teacher Education in Science
The Classroom Teacher Looks at Science Education
Interrelationships of the Fields of Child Development and Science Education as Indicated by Recent Research

Business:

A committee was formed to explore the possiblity of forming a study group which would meet prior to the fall conference.

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[15]Clarence M. Pruitt, "Theresa Jane Lammers," Science Education, Vol. 52, No. 2 (March 1968) pp. 105-108.

Another committee was formed to formulate a statement of the nature and purpose of the organization.

It was voted to offer the reports of the recorders at the meeting to Science Education for possible publication. The Secretary and the four recorders were appointed to a publications committee.

No action was taken on the question of whether or not to affiliate with a teacher education organization.

TWENTY-SIXTH MEETING

The Twenty-Sixth meeting was held April 21 and 22, 1950 at the Boston University School of Education.

President -- John Read, Boston University
Secretary -- Theresa Lammers, State Teachers College, Westfield, Massachusetts

Visits to the American Academy of Arts and Sciences, New England School Science Council, Wheelock College, Boston University Biology Laboratories, Children's Museum, Arnold Arboretum, Harvard University Graduate School of Education.

Topics:

Pending Problems in Science Teaching
Skills and Aids Valuable to Science Teachers

TWENTY-SEVENTH MEETING

Starting with the Twenty-Seventh conference, reports of the meetings are available in Science Education.[16] The fall meetings have usually been held at Teachers College, Columbia University and spring meetings at the home institution of a member.

1949-1950	President --	John Read Boston University
	Secretary --	Theresa Lammers State Teachers College, Westfield, Massachusetts
	Spring meeting --	Boston University
1950-1951	President --	George Haupt State Teachers College Glassboro, New Jersey

[16]Since reports of these meetings are available to the science education community in Science Education they are not summarized in this outline.

Secretary -- Betty Tyson
Willimantic State College
Willimantic, Connecticut
Spring Meeting -- Glassboro State Teachers College

TWENTY-EIGHTH MEETING

1951-1952

President -- Robert Cooper
Ball State Teachers College
Muncie, Indiana
Vice-President -- Eastern Section
Katherine Hill,[17] New York University
Vice-President -- Midwestern Section -- G.P. Cahoon[18]
Ohio State University
Vice-President -- Southern Section -- Ward Fletcher
University of Florida
Permanent Secretary-Treasurer -- Willard Jacobson
T.C. Columbia University

TWENTY-NINTH MEETING

Fall meeting: Ball State Teachers College
Muncie, Indiana

THIRTIETH MEETING

Spring meeting: Teachers College Columbia University

Business: The Conference honored Professor S.R. Powers for his long and distinguished service to the Conference and science education in general. The Conference set up regional sections to meet every spring and elect Vice-Presidents to the general Conference who would be elected at the spring meetings.

THIRTY-FIRST MEETING

1952-1953

President -- Rose Lammel
New York University

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[17]Clarence M. Pruitt, "Katherine Elizabeth Hill," Science Education, Vol. 48, No. 1 (February 1964) pp. 1-6.

[18]Clarence M. Pruitt, "Guybert Phillips Cahoon," Science Education, Vol. 45, No. 3 (April 1961) pp. 185-186.

Vice-President -- Eastern Section -- Katherine Hill
New York University
Vice-President -- Midwestern Section -- G.P. Cahoon
Ohio State University
Vice-President -- Southern Section -- Jerome Kuderna
Alabama Polytechnic Institute
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University

Business: At the business meeting in October 1953, the members of the Conference on the Education of Teachers in Science voted to change its name to Association for the Education of Teachers in Science.

The Association President was to be elected at the annual fall meeting and the Regional Vice-President and representatives to the Executive Committee were to be elected at the regional meetings in the spring.

THIRTY-SECOND MEETING

Spring meeting: Wilson Teachers College
Washington, D.C.

THIRTY-THIRD MEETING

1953-1954

President -- G.P. Cahoon
Ohio State University
Secretary-Treasurer -- Willard Jacobson
T.C. Columbia University
Vice-President -- Eastern Section -- Harold Tannenbaum
S.U.N.Y., New Paltz
Vice-President -- Western Section -- P.L. Whitaker
Indiana University

THIRTY-FOURTH MEETING

State University of New York State Teachers College at
New Paltz

THIRTY-FIFTH MEETING

Bradford Estate, Indiana University

THIRTY-SIXTH MEETING

1954-1955

President -- Ned Bryan
Rutgers University
Vice-President -- Eastern Section -- Harold Tannenbaum
S.U.N.Y., New Paltz

Vice-President -- Midwestern Section -- Dorothy Matala
Iowa State T.C.
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University
Spring meeting: Willimantic State Teachers College
Willimantic, Connecticut

THIRTY-SEVENTH MEETING

1955-1956

President -- John Wells
Madison College
Vice-President -- Eastern Section -- June Lewis
N.Y.S.T.C. Plattsburg, N.Y.
Vice-President -- Midwestern Section -- Sylvan Mickelson
Ohio State University
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University

Fall meeting was held Nov. 1 & 3 at T.C. Columbia University and Nov. 2 at Rutgers University.

Spring meeting - Trenton State Teachers College

1957

President -- Robert Wickware
Willimantic State Teachers College
Willimantic, Connecticut
Vice-President -- Eastern Section -- George Zimmer
Fredonia, New York
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University
Spring meeting -- Madison College
Harrisonburg, Virginia

1957-1958

President -- June Lewis
S.U.N.Y., Plattsburg, N.Y.
Vice-President -- Eastern Section -- Harold Tannenbaum
S.U.N.Y., New Paltz
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University
Spring meetings -- Harvard University
With NSTA in Atlantic City

1959

President -- George Zimmer
S.U.N.Y., Fredonia, N.Y.
Vice-President -- Eastern Section -- Herbert Schwartz
S.U.N.Y., New Paltz
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University
Spring meeting -- Temple University

Business: Officers and Executive Committee will

explore the possibility of making AETS a national organization composed of regional groups. The following steps were suggested:

1. A meeting with NSTA to which key leaders in science education would be invited.

2. A national meeting in conjunction with the 1960 meeting of NSTA in Kansas City.

3. The development of regional groups with emphasis upon the identification of key institutions and individuals.

1959-1960

President -- Harold Tannenbaum
S.U.N.Y., New Paltz
Vice-President -- Eastern Section -- Fletcher Watson
Harvard University
Secretary-Treasurer -- Willard Jacobson, T.C.
Columbia University
Spring meetings: Montclair State College
(Honored Rufus Reed)
With NSTA in Kansas City

Business: At the business meeting on October 30, 1959 the following resolutions were passed:

"1. That AETS petition the Board of Directors of the National Science Teachers Association to become a section of NSTA with full sectional responsibility and autonomy as provided in the bylaws of NSTA. That its purpose as a section of NSTA be to deal with teacher education in science."

"2. That AETS petition to become an associated organization in the Associated Organizations for Teacher Education (AOTE) and participate in formulating a sound program for teacher education in science within a total teacher education plan."

The Association decided to prepare a policy statement on the education of Teachers in Science.

The President was directed to write a constitution and bylaws for AETS.

(This is the final entry in the Secretary-Treasurer's "Black Book.")

1960-1961

President -- Herbert Schwartz
New York University
Regional President -- Victor Crowell
Trenton State College, New Jersey
Regional Vice-President -- David Sarner
Keene Teachers College
Secretary-Treasurer -- Jay Erickson, T.C.
Columbia University
Annual meeting -- Chicago, Illinois
Spring meeting -- Harvard University

Published Current Concerns and Issues in Science Education

Business: At the business meeting a Constitution and set of By-laws were adopted by the membership of AETS. (These were published in Science Education, Vol. 45. No. 3, April, 1961).

This was the last meeting of AETS to be reported in Science Education.

AETS now had a membership of about 260.

1961-1962

President -- Fletcher Watson
Harvard University
Secretary-Treasurer -- Harold Spielman
City College, N.Y.C.
Executive Committee:

Hubert Evans,[19] T.C. Columbia University
Sylvan Mickelson, Wayne State University
Robert Stollberg, San Francisco State University

Annual meeting -- San Francisco

Prepared a monograph entitled "The Task Before Us." Three new regional sections were approved: Southwestern Section, Southern California Section, and Northern California Section.

Began cooperation with NARST to start new journal.

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[19]Clarence M. Pruitt, "Hubert Melbourne Evans," Science Education, Vol. 47, No. 4 (October 1963) pp. 313-318.

1962-1963

President -- Willard Jacobson
T.C., Columbia University
Secretary-Treasurer -- Harold Spielman
City College, N.Y.C.

Regional Vice-Presidents:

Charles Bridges, Jr., University of Oklahoma, Norman, Okla.
Jack Smith, San Diego State College, San Diego, Calif.
Robert Maurer, Chico State College, Chico, Calif.
David Sarner, Keene Teachers College, Keene, New Hampshire

Executive Committee:

Hubert Evans, T.C. Columbia University
Sylvan Mickelson, Wayne State Univ., Detroit, Michigan

Annual meeting -- Philadelphia

Efforts to form a new journal have culminated in the Journal of Research in Science Teaching which will be published by Wiley Interscience Press.

Proposed an AETS-NSTA Cooperative Project for the Improvement of the Education of Teachers in Science.

Conferred its First Distinguished Life Membership on Samuel Ralph Powers.

The application from a Midwest Regional Section was accepted.

1963-1964

President -- R. Will Burnett
University of Illinois, Urbana
Secretary-Treasurer -- Harold Spielman
City College of New York

Regional Vice-Presidents:

Charles M. Bridges, Jr., University of Oklahoma,
Norman, Oklahoma
Robert Maurer, Chico State College, Chico, Calif.
Sylvan L. Mickelson, Wayne State University,
Detroit, Michigan
Fred Schlessinger, Ohio State University, Columbus, Ohio
Jack Smith, San Diego State College, San Diego, Calif.

Annual meeting -- Chicago

AETS publishes first brochure describing itself and its aims.

The appointment of a "Standards Committee" to study doctoral programs was announced.

Dues of all members who were not also members of NARST was raised from $4.00 to $10.00. Those members will receive a subscription to The Journal of Research in Science Teaching.

1964-1965

President -- Herbert Smith
Colorado State University
Fort Collins, Colorado
Secretary-Treasurer -- Sylvan Mickelson
Wayne State University
Detroit, Michigan
Vice-President -- Eastern Section -- Frank Sutman
Temple University, Philadelphia, Pa.
Vice-President -- Midwestern Section -- Fred Schlesinger
Ohio State
Vice-President -- South-Western Section -- Earl Reynolds
Southwestern State College
Weatherford, Okla.
Vice-President -- Northern California Section --
Robert Stollberg, San Francisco State
Vice-President -- Southern California Section --
Charles Heimler, San Fernando
Valley State College,
Northridge, California

Annual meeting -- Denver

1965-1966

President -- Ralph Lefler
Purdue University
Lafayette, Indiana
Secretary-Treasurer -- Sylvan Mickelson
Wayne State University
Detroit, Michigan
Vice-President -- Eastern Section -- Stephen Winters
S.U.N.Y., Buffalo
Vice-President -- Midwestern Section -- Violet Strahler
Dayton Public Schools, Dayton, Ohio
Vice-President -- Southwest Section -- Ronald Anderson
University of Colorado
Boulder, Colorado

Annual meeting -- New York City

The application from the North Central Regional Section was accepted.

Accepted the report of the Committee on the Guidelines for the Doctorate in Science Education.

1966-1967

President -- Edward Victor
Northwestern University
Secretary-Treasurer -- Sylvan Mikelson
Wayne State University
Vice-President -- Eastern Region -- Seymour Trieger
Temple University
Vice-President -- Southwest Region -- Ronald Anderson
Colorado University
Vice-President -- Midwest Region -- Lester Mills
Ohio University
Vice-President -- North Central Region -- Robert Yager
University of Iowa
Vice-President -- Northern California Region --
John Buller, Humboldt State College
Vice-President -- Southern California Region --
Ruth Roche
San Fernando Valley State College

Annual meeting -- Detroit

The Guidelines for the Doctorate in Science Education was published with financial help from the Shell Foundation and the Higgins Fund of Harvard University.

Voted to support the mailing of the Guidelines for the Undergraduate Professional Education of Teachers of Science to all AETS members.

Accepted application of the Southeast Regional Section.

1967-1968

President -- Sylvan Mickelson
Wayne State University
Detroit, Michigan
Secretary-Treasurer -- Robert Yager
University of Iowa
Vice-President -- Northern California Region --
Robert Maurer, Chico State College
Vice-President -- Eastern Region -- Gladys Kleinman
Rutgers University
Vice-President -- Southwestern Region -- William LaShier Jr.
Kansas State Teachers College
Vice-President -- Northwest Region -- Roger Olstad
University of Washington
Vice-President -- Midwest Region -- Lester Mills
Ohio University

Vice-President -- Southeast Region -- J. Stanley Marshall
Florida State University
Vice-President -- North Central Region --
Clarence Boeck, University of Minnesota

Annual meeting — Washington

Volume I of AETS Newsletter was compiled and mailed to members. The Newletter evolved from the practice of compiling and mailing papers presented at the annual convention.

Accepted application of the Northwest Regional Section.

1968-1969

President -- Stephen Winter
S.U.N.Y., Buffalo, N.Y.
Vice-President -- Eugene Lee
Emory University
Secretary-Treasurer -- Robert Yager
University of Iowa
Vice-President -- Northwest Region -- Harold Jorgensen
Portland State College
Vice-President -- Southwest Region -- William S. LaShier, Jr.
Kansas State Teachers College
Vice-President -- Southeast Region -- Eugene Lee
Emory University
Vice-President -- North Central Region -- Eugene Gennaro
University of Minnesota
Vice-President -- Eastern Region — Gladys Kleinman
Hunter College, CUNY
Vice-President -- Southern California Region --
Robert Lepper, California State
College, Fullerton

Annual meeting -- Dallas

Inaugurates Outstanding Young Science Educator Award with financial support from the Shell Companies Foundation. David Newton selected for first award.

"Guidelines for Content of Preservice Professional Education for Secondary School Science Teachers" published in May issue of The Science Teacher.

1969-1970

President -- Eugene Lee
Emory University
Secretary-Treasurer -- Robert Yager
University of Iowa
Regional Vice-President -- Northwest -- Fred Fox
Oregon State University

Regional Vice-President -- New England -- Fletcher Watson, Harvard University
Regional Vice-President -- Mid-West -- Jerry Underfer University of Toledo
Regional Vice-President -- Southwest -- Jacob Blankenship University of Houston
Vice-President -- Northern California Region -- Phyllis Gross, California State College Hayward
Vice-President -- North Central Region -- John Coulter St. Cloud State College
Vice-President -- Eastern Region -- John Montean University of Rochester
Vice-President -- Southern California Region -- Virgil Hettick, Orange Unified School District
Vice-President -- Southeast Region -- Eugene Lee Emory University

Annual meeting -- Cincinnati

Outstanding Young Science Educator Award -- Robert Tannenbaum.

Special AETS Committee to help develop volume of reprints from The Science Teacher and Science and Children for use in methods classes.

Negotiations continuing over co-sponsoring of Science Education.

Contributed $300 to NSTA Capital Fund Campaign.

1970-1971

President -- John Montean
University of Rochester
Rochester, N.Y.
Secretary-Treasurer -- Ronald Anderson,
University of Colorado
Eastern Region: Matt Bruce, Temple University
Ronald Raven, State University of N.Y. at Buffalo
Southeastern Region: Lehman Barnes, University of Georgia
John M. Goode, North Carolina Dept. of Public Instruction
Southwestern Region: Glenn McGlathery, University of Colorado, Denver
Northern California Region: Lawrence Lowery, University of California
Northwest Region: G. Harry Cannon, University of British Columbia

New England Region: Fletcher Watson, Harvard University
A. Harris Stone, Southern Connecticut College (State)

Annual meeting -- Washington

Outstanding Young Science Educator Award -- Richard Weller.

Continued negotiations with John Wiley and the editor of Science Education. Will also explore possibility of having a special page in The Science Teacher.

The applications for regional sections for New England, Central Canadian, Mid-Atlantic, and Southern Rocky Mountain were approved.

Will investigate the possibility of publishing a study of characteristics and career patterns of Science Teachers and Scientists.

1971-1972

President -- Paul Westmeyer
Florida State University
Secretary-Treasurer -- Jacob Blankenship
University of Houston

Southern Rocky Mountain Region:	Walter Saunders, Utah State
Eastern Region:	Harold Spielman, City University of New York
Mid-Atlantic Region:	Bernard Benson, University of Tennessee
New England Region:	A. Harris Stone, Southern Connecticut State College
Southwest Region:	Gene Hall, University of Texas
Northwest Region:	Harry Cannon, University of British Columbia

Annual meeting -- New York

Outstanding Young Science Educator Award --

One or more of the national officers attended each of the regional meetings under a grant from the DuPont Corporation. The officers solicited reactions to the AAAS Guidelines for the Preparation of Secondary School Teachers of Science and Mathematics and the NSTA Annual Self-Inventory for Science Teachers in Secondary Schools (ASSIST).

Distributed AACTE Performance-Based Teacher Education.

A committee was appointed by the President to explore alternative modes of publishing articles related to the interests of AETS.

Committee was established to review Guidelines for the Doctorate in Science Education.

Due to number of papers and cost of printing, only abstracts of papers will be printed in Newsletter.

1972-1973

President -- Ronald D. Anderson
University of Colorado
Secretary-Treasurer -- Jacob W. Blankenship
University of Houston

Southern Rocky Mountain Region:	Paul Tweeten, University of New Mexico
Eastern Region:	Douglas Roberts, Ontario Institute
Mid-Atlantic Region:	Paul Hounshell, University of North Carolina
New England Region:	Harold Miner, Northeastern University
Southern California Region:	Charles F. Williams, California State University at Fullerton
Southeast Region:	John Hassard, Georgia State University
Northwest Region:	Bruce A. Kaiser, Tigard Sr. High School
Southwest Region:	Harold M. Anderson, University of Colorado
Central Canadian Region:	William Andrews, University of Ontario
Midwest Region:	Jerry Underfer, University of Toledo
North Central Region:	Alan M. Voelker, University of Wisconsin

Annual meeting -- Detroit

Outstanding Young Science Educator Award -- John J. Koran. Petitioned Shell Foundation to allow $1,000 for Outstanding Young Science Educator Award to be split into two $500 awards for years 1973 and 1974.

AETS became the sponsor of Science Education. Ronald Raven temporary representative to Editorial Board.

Canadian, Alaskan and Hawaiian science educators encouraged to become members. Membership now 676 (current and delinquent)

Supported International Book Year with request to members for books for Asia.

1973-1974

President — Robert Yager
University of Iowa
Secretary-Treasurer -- Jacob W. Blankenship
University of Houston

Mid-Atlantic Region:	Thomas G. Testes, VPI & SU
Eastern Region:	Joyce Swartney, State University at Buffalo
North Central Region:	Alan M. Voelker and Paul H. Joslin
Midwest Region:	Jerry Underfer
Southwest Region:	Delmar Janke and Harold M. Anderson
Northwest Region:	Bruce A. Kaiser

Annual meeting -- Chicago

Outstanding Young Science Educator Award -- Gerald Krockover.

Adopted Revised Guidelines for the Doctorate in Science Education proposed by Committee chaired by David Butts. Published in December 1973 Newsletter and in the November 1974 Science Teacher.

Specific plans for AETS Yearbook Series emerged.

Began the study of the Guidelines for the Professional Pre-Service Sequence.

Began study of competency based teacher education program.

Began a study of "Mission and Goals" for the Association.

Amoco Foundation agrees to provide some support for Young Science Educator Award.

Began a "Position Paper Series" for annual meeting.

The first AETS Yearbook, A Review of Research on Teacher Behavior by Balzer, Evans and Blosser published.

Number of members -- 655.

1974-1975

President -- David P. Butts
University of Georgia
Secretary-Treasurer -- John Schaff
University of Toledo

The AETS Regions were delineated as follows:

New England Region

Maine
Vermont
New Hampshire
Rhode Island
Connecticut
Massachusetts
New Brunswick (Canada)

Eastern Region

New York
Pennsylvania
New Jersey
Quebec (Canada)

Mid-Atlantic Region

Delaware
Maryland
Virginia
North Carolina
Tennessee
Kentucky
West Virginia

Midwest Region

Michigan
Illinois
Indiana
Ohio

North Central Region

North Dakota
South Dakota
Nebraska
Iowa
Minnesota
Wisconsin

Southeastern Region

Florida
South Carolina
Georgia
Alabama
Mississippi
Louisiana*

Southwestern Region

Texas
Louisiana*
Arkansas
Missouri
Kansas
Oklahoma
Colorado*

Southern Rocky Mt. Region

New Mexico
Arizona
Utah
Nevada
Wyoming
Colorado*

Southern California Region

Northern California Region

Northwest Region

Washington
Oregon
Idaho
Montana
British Columbia (Canada)
Alberta (Canada)

Central Canadian Region

Ontario
Saskatchewan
Manitoba

1974-1975 Annual meeting -- Los Angeles

Outstanding Young Science Educator -- Doris Trojcak

Northwest Region:	John P. Smith, University of Washington
Eastern Region:	Albert Nous, University of Pittsburgh
Northern California Region:	Terry Thomas, California State University of Sacramento
Southwest Region:	John M. Nichel, Wichita State University
Southern Rocky Mountain Region:	Walter L. Saunders, Utah State University
Southeast Region:	Gary Awkerman, Charleston County
Mid-Atlantic Region:	Thomas G. Teastes, Virginia Polytechnical Institute and State University
North Central Region:	Sister Margaret Pirkl, College of St. Theresa
Midwest Region:	Darrel W. Fyffe, Bowling Green State University

Revised Constitution and By-laws at Chicago meeting (unanimous approval by both absentee ballots and members present).

In this revision the duties of the officers were specified more completely and added six members at large to the Board. The requirement that members belong to a region was terminated. Articles dealing with Committees and Publications were added to the Constitution.

Approved publication of the monograph "Simulated Classroom Incidents" by Vincent Lunetta.

Began work on a directory of doctoral programs in science education.

AETS becomes division affiliate rather than a section in NSTA. President of AETS becomes voting member of the Board of Directors of NSTA, and the NSTA president becomes a member of the AETS Board of Directors.

Number of members -- 714.

1975-1976 President -- Jacob Blackenship
University of Houston

Secretary-Treasurer -- John Schaff
University of Toledo

Directors-at-large:

David H. Ost, California State College Bakersfield
Robert W. Howe, Ohio State University
James Barufaldi, University of Texas, Austin
Ertle Thompson, University of Virginia
William R. Snyder, Florida State University
Doris Trojcak, University of Missouri

(Consistent with the constitutional and by-law revisions, AETS elected "Directors-at-large.")

Annual meeting - Philadelphia

Outstanding Young Science Educator -- Vincent Lunetta

AETS withdrew from participation in the COOP Committee with the secretary being asked to form an Ad Hoc Committee to explore possibilities of a new cooperative arrangement.

Second AETS Yearbook, Science Teacher Education 1974: Issues and Positions.

New AETS membership brochure becomes available.

1976-1977

President -- Patricia Blosser
Ohio State University
Secretary-Treasurer -- John Schaff
University of Toledo

Directors-at-large:

James Barufaldi, University of Texas, Austin
Doris Trojcak, University of Missouri
Ertle Thompson, University of Virginia
Paul G. Cowan, North Texas State University
William R. Snyder, Florida State University
Ann C. Howe, Syracuse University

New AETS Bulletin published.

Revised AETS Constitution and By-laws published in AETS Newsletter, Vol. 10, No. 2.

1976 AETS Yearbook, Reflections on Science Education.

1977 AETS Yearbook, Science Teacher Education: Vantage Point 1976.

THE AETS EXPERIENCE

For a half century or more, members of the AETS, and before that the Conference on the Education of Teachers in Science, have been meeting, discussing, planning, writing, exerting political pressure, and associating with those who have similar problems and like ambitions. Certainly, most AETS members have enjoyed the lively give-and-take and the informal camaraderie that is usually characteristic of their meetings. As one veteran of many a verbal joust remarked, "Ideas are pushed farther and we dig deeper at AETS than in any other organization to which I belong." But, a pat on the back should also be a push from behind. If a function of historical study is to learn from experience, then the present and future membership of AETS, and perhaps other organizations, should try to learn from the experience of AETS.

The following are ideas gleaned from the examination of the history of AETS. They are presented in outline form. In keeping with a most precious tradition of AETS, they are brought to the arena of criticism and discussion with the justifiable expectation that the next version will benefit from this critical analysis.

Discussion, criticism, and the exchange of ideas has been one of the most important functions of AETS. Sometimes, it is forgotten that one of the most important functions of any professional organization is to provide opportunities for members of that profession to meet, exchange ideas, and to submit ideas and accounts of experience to competent criticism. AETS members have come away from their meetings with new ideas ranging from a slightly different way of making suggestions to student teachers to profound and revolutionary ideas that might drastically change the ways we educate teachers in science. To make these precious interchanges possible will probably always be one of the most important functions of AETS.

The discussions and interactions at AETS have had influences upon the entire field of science education and upon the broader field of education. The early discussions of science teacher certification were pioneering efforts to lift the level of preparation of those who work with children and young people in science. At another level, the "Guidelines for the Doctorate in Science Education" has been an influential effort to raise the level of preparation of those who enter the profession of science education. Much influence has been exerted by the members of AETS. They are among the most influential science educators in the world. The books that AETS members have written would fill a small library. Many have attested that they have been influenced and have had their ideas refined in the smelter of discussions at AETS.

AETS has always had amongst its members many "impatient ones" and part of its influence has been due to the drive of those who want to "make things better." But, the singular importance of exchange of ideas, lively discussion, and searching criticism remains. Actually, the two functions of AETS should be symbiotic. The policies that are developed and the actions that are taken should benefit from the discussion and criticism of informed colleagues.

Many AETS members have known each other well and have been able to carry on discussions year after year probing deeper into the problems they have faced. One of the attributes of AETS has been that many of its members have been able to attend regularly throughout much of their careers. As one distinguished former member stated," We were able to carry on conversations that went on for years. During the months between meetings I would try to think up some kind of an aswer to that inconvenient point that ...made at our last meeting." At many professional meetings papers are presented, and they are discussed by someone you do not know and whom you will probably never meet again. In these organizations, there is little opportunity to interact with knowledgeable colleagues over an extended period of time. Over the first half century of AETS' existence, many of the leading figures in science education benefitted fro the opportunities to interact with knowledgeable colleagues over periods of years. More than in many organizations, the discussions have been carried on over an extended period of time, probed beneath the surface of issues, and influenced the thinking of those who have taken part. If this has been an important feature of AETS, then we should seek even better ways to promote these conversations over the years.

AETS has been an important avenue toward growth and recognition for young science educators. Every autumn, the science educators at Temple University fill their automobiles with graduate students and join other science educators in usually spirited sessions of the Eastern Regional Section of AETS. Since 1968 , AETS has recognized an outstanding young science educator with an award at the national convention, and often the young science educator has addressed the luncheon session of the convention. Many other young science educators have found in AETS a forum for their ideas, an outlet for reports of their research and development, and a mechanism whereby they can make contributions to their field and be recognized for it. The ambitious yearbook project provides an outlet for reports and discussions that can have lasting impact. These are some of the ways that AETS has served as an avenue toward growth and recognition for young science educators.

It is important for a profession to have mechanisms whereby able and ambitious young professionals can communicate their ideas, report the results of their work, and receive recognition from colleagues in their field. Without individuals who have ambitions and drive, a field will be moribund. But, there must be channels through which these ambitions and drives can be expressed. Through its regional and national meetings, committees and commissions, publications, and offices at various levels of the organization, AETS has provided a way to contribute to the field and gain recognition. Even the most superficial and cursory examination of leadership in science education and science teaching will reveal the remarkable achievements of many AETS members, and in many cases AETS helped make it possible.

The study of our history suggests that AETS and other organizations should recognize that the ambitions and drives of individuals are essential ingredients in progress. If this were recognized explicitly, we might provide even better mechanisms for harnessing this energy.

AETS has led in the development of teacher education. AETS has been a leading force in the development of teacher education. As one example, many

of the early meetings of the Conference on the Education of Teachers in Science considered certification requirements for science teachers in the states from which some of the most active members came. According to the records, proposed certification requirements for Pennsylvania, New Jersey and New York were discussed at meetings of the Conference on the Education of Teachers in Science. The proposals were submitted to the Departments of Education and apparently accepted with little or no modification. These certification requirements influenced the statements of requirements in many other states. Substantially, the same requirements were adopted in many other states. These have been the certification requirements for more than 30 years and are still the requirements in many states.

The roots of competency based teacher education are many, but science educators in AETS have been among the most active professionals in developing the theory and practice of competency based teacher education. Certainly, they have been among the leaders in trying and testing this approach to teacher education.

The logical, historical extension of these developments might be that the continued certification of teachers should be considered in terms of the achieved competencies of the teacher's students. Probably, AETS will among those who provide forums of criticism for whatever may be the next steps in teacher education.

AETS has led in teacher education because it has been organized at levels where members can get together year after year and take effective political action. The organization at the regional level has made it possible for science educators in a region to discuss, plan and work together once or twice a year. It has also made it possible for graduate students to attend meetings and be active in the organization. This is a unique form of organization in science education and, perhaps, throughout education. It can be argued that it has made it possible to operate in a more concentrated fashion on problems and issues.

The regional organization of AETS has also helped in tackling problems of teacher education at the state level. In the United States, education is primarily a responsibility of the states, and some of the most important education policies are promulgated at the state level. The influence of AETS and AETS members upon state certification policies has been enhanced by the regional organization of AETS. Similarly, AETS members have been able to help each other in examining and dealing with state and regional problems, ranging from science teaching materials adoption procedures to the teaching of various controversial issues, by having an organization in which they can meet and discuss and plan strategies for action.

Already, many of the most important policies affecting teacher education in science are being made at the national level. Many of these decisions affect many fields in addition to teacher education in science. It is fairly safe to predict that this will be even more the case in the future. The national organization of AETS has cooperated with other teacher education organizations and has organized letter writing campaigns and other attempts to influence policymaking at the national level. A logical extension of the history of AETS would seem to be that AETS and its members should seek to develop more effective ways to influence policy at the national level.

The "In" "Of" distinction. The first name of the organization was "Conference on the Education of Science Teachers in State Teachers Colleges." But, early in its history the name was changed to "Conference

for the Education of Teachers in Science," and in this change there is an important distinction.

At first thought the distinction between "In" and "Of" may not seem important, but the ramifications are profound. Because AETS is concerned with education in science, it has been a major force in the development of elementary as well as secondary school science. Most science educators agree upon the critical importance of science in the elementary school. However, most science experiences in the elementary school are developed by the general classroom teacher. She/he is not exclusively a teacher of science, but she/he has the responsibility for developing children's experiences in most of the areas of the curriculum. Leaders in elementary school teacher education in science have found AETS a comfortable organization in which to work, and they have contributed to the effectiveness of the organization.

There is general agreement in AETS that all teachers should be educated in science. In most of our teacher education institutions much of this education in science is conducted in such substantive fields as biology, chemistry, physics, geology, astronomy, etc. Some of the education of teachers in these fields is very, very good, and some of it is - - - - - . While there have been discussions at AETS meetings of science in general education and of better ways of teaching various aspects of science, there is considerable agreement that this dimension of the education of teachers in science has room for improvement. The "In" "Of" distinction can continue to be an important one, and a logical implication from this historical analysis is that greater attention might be directed at the improvement of the education that all teachers receive in science.

The need for a sense of history. The study of the history of AETS presents the investigator with problems not uncommon in historical studies. Early documents are few and difficult to locate. Programs and correspondence have been discarded in homage to efficiency, and unfortunate accidents have deprived us of what may have been the only remaining copies of materials that, with the passage of time, seem ever more precious. There have been only sporadic attempts at maintaining archives.

For a few years historical materials concerning AETS were recorded and transmitted in a form that is preserved in libraries for future scholars. But, for most of its history, libraries have few words of the concerns and experiences of the Association for the Education of Teachers in Science.

As we belatedly begin to recognize historical studies as an important research mode with the potential for yielding useful resutls, we may hope that we will cultivate a more sensitive sense of history. Historical illiteracy in one's own field is as deplorable as its scientific cousin.

SOURCES

1. For an understanding of the origins and early years of the Conference on the Education of Science Teachers in State Teachers Colleges, I have benefitted from conversations with Gerald S. Craig, Victor Crowell, Fred Fitzpatrick, S. Ralph Powers and others.

2. I am deeply indebted to John C. Johnson for providing the Library of Teachers College, Columbia University with copies of almost all of the programs up to World War II.

3. From 1946 through 1959, the minutes of meetings were kept by the secretary-treasurer in the "black notebook". This notebook is on file in the Department of Science Education, Teachers College, Columbia University.

4. From 1949 to 1960 reports of the fall meetings were published in Science Education. See:

1950, Vol. 34, no. 3	1955, Vol. 39, no. 2
1951, Vol. 34, no. 3	1956, Vol. 40, no. 3
1952, Vol. 36, no. 2	1957, Vol. 41, no. 4
1952, Vol. 36, no. 4	1958, Vol. 42, no. 4
1953, Vol. 37, no. 4	1960, Vol. 44, no. 4
1955, Vol. 39, no. 1	1961, Vol. 45, no. 3

5. The original constitution of the Association for the Education of Teachers in Science is to be found in Science Education. Vol. 45, no. 3, April 1961, pp. 189-191.

6. Since 1967, information about AETS activities has been recorded in the AETS Newsletters. Usually, three or four issues have been circulated each year. By the end of 1976, nine volumes of Newsletters had been issued.

7. Some information about AETS has, upon occasion, been published in The Science Teacher.

8. Some of the early studies and papers presented at meetings of the Conference on the Education of Teachers in Science are digested in the following volumes:

Curtis, Francis D., Digest of Investigations in the Teaching of Science, New York: Teachers College Press, 1971.

Vol. 1	to	1925
Vol. 2		1925-1930
Vol. 3		1931-1937

Boenig, Robert W., Research in Science Education 1938 through 1947. New York: Teachers College Press, 1969.

Swift, J. Nathan, Research in Science Education 1948 through 1952.

Lawlor, Elizabeth Phelan, Research in Science Education, 1953 through 1957.